

**RESPONSE TO REVIEW COMMENTS DATED 14 APRIL 2009  
SUPPORT PLANS FOR THE ENGINEERING EVALUATION/COST ANALYSIS  
WORK PLAN FOR THE AVERY LANDING SITE**

**20 April 2009**

**Attachment A - Treatability Study Work Plan**

Hall's May 1 comments are in blue.

1. Page 2, Section 1.2, 5<sup>th</sup> paragraph. The analytical results from the various soil fractions and residuals resulting from soil washing will be compared to: EPA Removal Action Level Guidelines; EPA Regional Screening Levels; the Idaho Risk Evaluation Manual concentrations for soil; the NOAA Screening Quick Reference Tables, Freshwater Sediment Criteria (Buchman 2008); and the Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems (MacDonald 2000).

*Response: It is not intended to place the treated soil in the river; therefore, sediment guidelines are not appropriate.*

I understand their point here. However, we should make sure that they do include the sediment guidelines when reviewing results for sediment samples.

2. Page 3, Section 2.1. Clarify that the soil treatability samples will be collected from the six (6) "Test Pits for Soil Sampling" shown on Figure 2 (Treatability Study Sampling Locations).

*Response: The text "in the areas shown on Figure 2 will be revised to "as shown on Figure 2".*

The six test pits for treatability testing are not included in the SAP.

3. Page 3, Section 2.2. Clarify the goal for preparing three composite samples. For example, are the composite samples intended to represent different target levels of contamination such as low, medium, and high, or are they intended to represent a random or average amount of contamination?

*Response: The samples are intended to represent the range of contamination that might be treated.*

This doesn't answer the question, and it doesn't explain how the composite samples will adequately represent the range of contamination that might be present. There are various ways that the three composites for treatability testing could be prepared. If three composites are going to be obtained from six test pit locations, how will they be composited? Will it be random? Will all three treatability composites be prepared from equal parts of the six test pit samples (i.e., all three treatability composites will essentially be the same)? Or, will they place the six test pits into separate categories, based on relative amounts of contamination present? Are they going to prepared three different composites based on relative contamination (e.g, low, medium, and high), with one prepared from the

two lowest test pits, one prepared with the two middle test pits, and one prepared with the two highest test pits?

Additionally, how will they determine that the composites will, in fact, “represent the range of contamination that might be treated”? There should be more details about how they plan to select the test pit locations and prepare the composites to address this. Will they just dig six test pits randomly and use that? What if the test pits don’t encounter any free product? They should be prepared to evaluate each test pit as it is dug for applicability and representativeness.

And, analytical testing should be performed and compared to existing data to verify that the samples are, in fact, representative. Analytical testing should be also performed on each of the composite samples to establish a baseline level of contamination prior to any treatability testing, so that an evaluation of the effectiveness of treatment can be made.

4. Page 3, Section 2.3.2. Three products will be generated; however, Figure 3 lists as many as nine samples (A through I). All samples indicated on Figure 3 should be addressed in the text. Also, the samples discussed in this section should include the sample ID used in Figure 3 as a cross-reference.

**Response:** *This will be clarified, and cross-referencing added where helpful.*

5. Page 3, Section 2.3.2. Revise this section to match the process outlined in Figure 3. For example, there is no mention in the text of the #10 mesh dry screening step (Sample B to C).

**Response:** *This section will be clarified.*

6. Page 4, Section 2.4. In addition to photographs before and after soil washing, required documentation must include documentation of laboratory observations.

**Response:** *This documentation will be added.*

7. Page 4, Section 1.2, 1<sup>st</sup> paragraph. The scope of laboratory analyses must be expanded to include chemical analysis for soil washing rinsate.

**Response:** *Chemical analysis of rinsate will be added.*

8. Page 4, Section 1.2, 1<sup>st</sup> paragraph. The scope of laboratory analyses must also be expanded to include collection and analysis of a “confirmational” soil fraction sample, and this sample must be subject to VOCs, SVOCs, metals, PCBs, NWPTH-Dx, and TAL metals.

**Response:** *We do not understand what you mean by “confirmational” sample. Furthermore, we only intend to analyze for the agreed upon COPCs for this Site. TPH and PAH analyses are already in the plan. Based on site data, soil metals are at background levels and therefore not an issue (if metals are elevated in groundwater, it would be from solubilization under reducing conditions caused by TPH). The analytical plan will be revised to include PCBs for untreated soil samples, and if detected in these samples PCB analysis will be performed on treated samples also.*

During a first round of treatability testing, specific variables and steps are evaluated for efficacy, success in treatment etc. The first round of treatability testing will often indicate that specific steps, techniques, fraction sizes, etc. do not work, and the results may indicate that additional steps that were not included may be necessary. Therefore, it can be very useful to perform additional rounds of testing to modify the variables as necessary (i.e., to “optimize” treatment. At the very least, it can be useful to perform a “confirmation” round of testing, in which the optimal treatment scheme is performed again, perhaps on a larger batch of untreated material, to confirm the results from the first round.

The proposed work plan does include three sets of treatability testing, one each on the three composite samples. If all three composite sample are essentially the same, then perhaps the triplicate tests are sufficient to confirm the reproducibility of the treatment. However, depending on the response to comment 3 and the nature of each composite, a single round of treatability testing on each may be inadequate to predict full-scale performance.

Regarding performing the full suite of analytical testing (VOCs, SVOCs, metals, PCBs, NWPTH-Dx, and TAL metals) on the treated material, and regardless of the question about what the COPCs for the site are: if one option for the treated material will be place it back in the ground adjacent to the St. Joe River, then the material should be analyzed for all potential contaminants of concern. Just one potential issue as an example: metals may become concentrated during soil washing because of the size fraction separation.

9. Page 5, Section 3.0, 3<sup>rd</sup> paragraph. The report must include a discussion of analytical results compared against the potential ARARs and TBC materials identified in Comment No. 1.

*Response: Comparison of treatment results to appropriate cleanup levels will be performed in the EE/CA evaluation process, not in the Treatability Study.*

This is unsatisfactory. There is very little detail about ARARs in the EE/CA Work Plan, and nothing in the Sampling and Analysis Plan. It is reasonable to request that the proposed list of ARARs in Comment #1 be included somewhere in these work plans. Also, how can the effectiveness of the treatability study be adequately examined if the results are not compared to ARARs?

10. Figure 3. Clarify why Sample B requires crushing for analysis, but Samples A and C do not.

*Response: All samples will be crushed for analysis. This clarification will be added.*

11. Figure 3: The composite (untreated) samples must also be analyzed for the parameters of concern (M, PS, A, L, etc.).

*Response: The comment is unclear. See our response to comment #8 above.*

The untreated composite samples should be analyzed for the same suite of analytical testing as the treated materials. Otherwise, how will it be possible to determine if the soil washing is effective?

## **Attachment B - Field Sampling and Analysis Project Plan**

12. Section 2.0. Revise to incorporate by reference the Treatability Study Work Plan.

*Response: The Treatability Study will be referenced in Section 2.1 of the SAP.*

13. Page B-4, Section 3.1.1, 1<sup>st</sup> paragraph. Clarify why the proposed boreholes for soil sampling are situated only in vicinity of the former 500,000 gallon fuel oil tank, as opposed to including other areas such as the former boiler house and machine shop.

*Response: Soil samples will be obtained from not only the vicinity of the former 500,000 gallon fuel tank, but also from the western portion of the site (see Figure SAP-3). The soils and groundwater has been investigated in the vicinity of the former boiler house and machine shop, but soils will be observed and samples of the smear zone will be obtained with test pits in the general railroad facility area during the treatability study (see Treatability Study Work Plan). The text will specify that the test pits are located in the western half of the property and in the area of the former railroad facility.*

I don't think it is clear from the SAP or Treatability Study Work Plan that the test pit locations are specifically targeted towards any of these former facility features. Maybe they are, but they just look like they are randomly spaced. Maybe it would be helpful if they provided specific details as to the rational of each test pit location (i.e., compare the locations to the former facility diagram)? Also, they didn't answer the question: why only bore holes near the former tank location, but test pits everywhere else? Is it because the former tank is in the road right-of-way? If so, that's fair, but it seems that this should be addressed, including a discussion of any potential limitations from the use of two different subsurface investigation techniques at different areas of the site.

14. Page B-4, Section 3.1.1, 1<sup>st</sup> paragraph. Revise to note that soil samples will be obtained by excavating "until groundwater is observed," which is expected to occur at a depth of approximately 10 to 12 feet below ground surface.

*Response: This revision will be made.*

15. Page B-4, Section 3.1.1., 1<sup>st</sup> paragraph. Clarify whether the drilling technique is air rotary or air rotary casing hammer (ARCH). (See also comment recommending hollow stem auger below.)

*Response: This text will discuss why air-rotary drilling will be used.*

16. Page B-5, Section 3.1.1.1, 1<sup>st</sup> bullet. Describe what, if any, additional permitting and/or clearance requirements are associated with the boreholes to be drilled beneath Highway 50.

*Response: The text will be revised to include this discussion.*

17. Page B-5, Section 3.1.1.1, 2<sup>nd</sup> bullet. Describe what, if any, additional locating activities will be performed outside of public rights-of-way.

*Response: The text will be revised to clarify that a private utility locating service will be used.*

18. Page B-5, Section 3.1.1.2. The number of soil samples must be revised to allow for the possibility of multiple contaminated soil horizons (e.g., 3 to 5 soil samples dependent on the presence of contaminated soil horizons).

*Response: This revision will be made.*

19. Page B-5, Section 3.1.1.2. Clarify whether soil samples will be collected with a lined split-spoon sampler, and whether the soil samples collected at 5-foot intervals will be submitted for laboratory analysis.

*Response: The text will state that lined split-spoon samplers will be used by drillers to collect soil samples from boreholes. The text will be revised to clarify which samples will be sent to the laboratory and which will be archived.*

20. Page B-5, Section 3.1.1.2. Soils must also be classified for color using a Munsell soil color chart.

*Response: This will be added.*

21. Page B-5, Section 3.1.1.3, 1<sup>st</sup> paragraph. The additional field screening methods must also include sheen testing.

*Response: Sheen testing will be added to the field screening methods.*

22. Page B-5, Section 3.1.1.3, 2<sup>nd</sup> and 4<sup>th</sup> paragraphs. A major purpose of this field sampling activity is to investigate the western portion of the Site. Given that no information exists for this portion, it is inappropriate to assume a limited list of analytes. Thus, the test pit soil samples must be evaluated for VOCs, SVOCs, PCBs, NWTPH-Dx, and TAL metals.

*Response: Inclusion of these analytes (VOCs, SVOCs- except for PAHs and naphthalene, and metals) are inconsistent with the Work Plan. These analytes were determined to not be soil COPCs for the site.*

Identification of diesel, heavy oil, and PAHs as COPCs does not mean that other possible contaminants have been ruled out. EPA has always maintained that the objective of further investigation should not be limited to the known LNAPL plume but should also include the investigation of any impacts from historic rail operations. Because the western portion of the site has not been investigated, it is too early to rule out any other COPC.

23. Page B-5, Section 3.1.1.3, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> bullet. Clarify whether cPAHs or PAHs be analyzed for.

*Response: The text will be revised to state all typical PAHs.*

24. Page B-5, Section 3.1.1.3, 4<sup>th</sup> paragraph. EPA detected PCBs in the product sample in HC-4 and in subsurface soil samples. Thus, PCBs must also be analyzed for in subsurface soils.

*Response: This would be inconsistent with the Work Plan. Surface soils in the western portion of the site will be analyzed for PCBs because no data exists at this time for this area of the Site. Additionally, LNAPL samples and groundwater samples collected from new*

*wells will be analyzed for PCBs. Groundwater samples collected from previously installed wells will not be analyzed for PCBs because these wells have already been analyzed for PCBs and all results were well below Federal and state screening levels for total PCBs. As stated in the Work Plan, subsurface soil samples will not be analyzed for PCBs because all historical soil data indicates that detectable PCB concentrations have been at trace levels.*

The EE/CA Work Plan does say that “However, surface soils in the western portion of the Site and floating product and groundwater not previously investigated will be tested for PCBs.” Maybe we could respond this way: If PCBs are detected above ARARs in surface soil samples from the western portion of the site or in floating product or groundwater not previously investigated, then it may be necessary to perform additional subsurface soil investigation in the western half for PCBs. So, why not include the analytical testing now when the test pits are open, rather than mobilize out for a separate field event?

*“As stated in the Work Plan, subsurface soil samples will not be analyzed for PCBs because all historical soil data indicates that detectable PCB concentrations have been at trace levels.”* Note that the Work Plan does not specifically state this, although it is implied.

25. Page B-6, Section 3.1.1.5. Clarify the following statement: “If boreholes are required to collect soil samples, then the boreholes will be backfilled by a certified drilling contractor with concrete. The boreholes will also be marked with a flush-mount steel plate as described above.” Previously in the same paragraph, it states boreholes will be backfilled with bentonite and bentonite grout. Clarify why will concrete be used for boreholes with soil samples? Also, clarify whether soil samples will be collected from all boreholes.

*Response: This text will state that boreholes will be backfilled with bentonite and bentonite grout.*

26. Page B-6, Section 3.1.1.6. Clarify why this section states that Golder field personnel will survey boreholes and test pit locations, whereas Section 3.2.1.9 states that a certified surveyor will survey the MWs (i.e., why not use the certified surveyor to survey all locations?).

*Response: This text will state that borehole and monitoring well locations will be surveyed.*

27. Page B-7, Section 3.2, 1<sup>st</sup> paragraph. An air-rotary casing hammer will likely mobilize any LNAPL and create a pressure differential in an area of influence around the borehole as the air medium will affect the subsurface, which may bias future water sampling. Thus, clarify why the groundwater monitoring wells will be installed using air-rotary drilling techniques, as opposed to using a hollow stem auger drilling rig or a reverse circulation drilling rig.

*Response: This text will discuss why air-rotary drilling will be used.*

This doesn't answer our concern that air-rotary drilling may spread the LNAPL around and may not be appropriate for this site. To be fair, though, the four proposed monitoring well locations do not seem to be in known LNAPL areas.

28. Page B-7, Section 3.2, 2<sup>nd</sup> paragraph. Provide additional details references, or supporting data for the following statement: “The groundwater is flowing parallel to the river within the eastern portion of the Site (Section 15 Area). The groundwater flow pattern is also influenced from groundwater flowing southward from the mountainside. The Site groundwater appears to change direction and flow toward the southwest and toward the St. Joe River from commingling with mountainside groundwater in the middle portion of the Site (in the area around well HC-4 and around the boundary between Section 15 and 16 Areas).”

**Response:** *This discussion will be revised.*

29. Page B-8, Section 3.2.1.2, 2<sup>nd</sup> paragraph. Clarify why MW GA-1 will be the first drilled and installed well, given that this well is most likely to be in a contaminated area.

**Response:** *This discussion will be added.*

Fine, but are they going to change the proposed order of installation?

30. Page B-9, Section 3.2.1.5, 2<sup>nd</sup> paragraph, 5<sup>th</sup> sentence. Revise this sentence to note that screen depth will also depend on seasonal groundwater fluctuations and the groundwater conditions when the wells are installed, to ensure that the screen is installed at appropriate levels.

**Response:** *This text will be clarified.*

31. Page B-10, Section 3.2.1.5. Clarify whether the filter pack installation includes swabbing with a surge block.

**Response:** *The text will discuss how the wells will be developed.*

32. Page B-10, Section 3.2.1.8. Clarify whether using drop tubes will interfere with the ability to get accurate product levels or thicknesses in the wells. In addition, clarify whether the drop tube be used for only the first sampling event or be maintained as a permanent well feature.

**Response:** *These clarifications will be added.*

I'm not satisfied with many of these responses that say nothing more than “clarification will be added.” We'll need to review these “clarifications” closely to see if they address the original question. Seems likely that more than one more round of work plan reviews will occur.

33. Page B-12, Section 3.2.2. All new and existing monitoring wells and piezometers must be investigated for LNAPL, and the resulting data must be reported to EPA prior to soil boring and MW installation. If the data indicates that the LNAPL plume has changed since the last investigation, then the locations of the proposed soil borings and MWs will be re-evaluated. Furthermore, any subsequent MW sampling event must also include an investigation of all wells and piezometers (whether to be sampled or not) for the presence and thickness of LNAPL and for groundwater elevations.

**Response:** *This was implied in the Work Plan. This will be clarified in the text.*

This is a minor point, but this wasn't implied in the work plan at all.



34. Page B-12, Section 3.2.2.2. Clarify why floating LNAPL will be collected from only MW-11 and HC-4, as opposed to all wells and piezometers where free product is detected during the LNAPL survey.

*Response: The basis for only sampling MW-11 and HC-4 (as stated in the Work Plan) will be clarified in the text.*

I don't have a problem with them selecting MW-11 and HC-4 as representative of the existing wells with LNAPL. However, if LNAPL is detected in any well where it wasn't before, or in any new well (i.e., wells they install or the wells EPA installed in 2007), I would strongly suggest that that LNAPL from that well should also be characterized, as it would represent new data for the site.

35. Page B-13, Section 3.2.2.1. Clarify whether there are any special considerations or procedures to determine product levels in wells that contain the drop tube.

*Response: This text will be clarified.*

36. Page B-13, Section 3.2.2.1. Clarify what alternative procedure will be used to sample groundwater if the LNAPL proves to be too thick for use of a peristaltic pump.

*Response: It is not anticipated that this condition will occur. This will be clarified in the text.*

37. Page B-14, Section 3.2.2.4. Clarify why PCBs will be analyzed only at specific wells, as opposed to all wells.

*Response: GA-4 will also be included in the PCB analysis. The decision to only analyze new wells and LNAPL for PCBs was discussed in the Work Plan.*

This is OK, but if PCBs are detected in any new subsurface sample (i.e., soil borings near the former fuel storage tank), then it may be reasonable to expand the scope of work with respect to PCBs.

38. Page B-14, Section 3.2.2.4 (and other sections). The metals must be revised to include aluminum, iron, and manganese.

*Response: These metals will be included for water analysis.*

In addition to groundwater, all metals (including these and the others included in the draft SAP) should be analyzed for soil (test pit and borings). While the EE/CA Work Plan does state that metals are not considered to be a COPC for site soils, much of the site has not been characterized (i.e. the western portion of the site or the area around the former fuel storage tank), so it would be preliminary to exclude metals analyses from these areas. See the response to comment #22 above.

39. Page B-14, Section 3.2.3. Clarify which wells will be included in hydraulic gradient investigation.

*Response: The text will state that all wells will be included.*



40. Page B-14, Section 3.2.3. Clarify whether the groundwater levels in those wells that contain LNAPL will be adjusted for the presence of the LNAPL, and if yes, what the correction factor will be.

**Response:** *This text will be clarified.*

41. Page b-15, Section 3.3. Clarify whether there are any specific plans to evaluate the depth and extent of the petroleum smear zone, especially near the bank of the river?

*Response: The smear zone in the river will be investigated during sediment sampling, at which time the entire length of each sediment core sample collected in the river will be visually observed for the presence of petroleum hydrocarbons. Any observations will be noted. The entire core sediment sample will be submitted to the laboratory for analysis. We do not intent to take any sediment samples from under the fabric liner or from below the rip-rap because we do not want to compromise the integrity of the impermeable barrier system. Furthermore, at least one test pit that will be excavated during the treatability study is very close to the bank of the river (but far enough away not to compromise the impermeable barrier system) and will investigate the petroleum smear zone at that location.*

I don't think that the sediment samples will provide any adequate data about the bank smear zone. The concerns about the "integrity of the fabric liner system" are noted. The treatability test pits are not included in the SAP and should be. I doubt that one test pit is sufficient to adequately evaluate the bank smear zone. Perhaps some additional boring near the bank of the river could provide more data.

42. Page B-16, Section 3.3.1.1: Clarify the sediment sampling method and how it will be performed 3 to 4 feet from the river bank.

**Response:** *This clarification will be added.*

43. Page B-14, Section 3.3.1.4: Clarify why metals analyses will be performed on only LNAPL samples, and why a filtered water sample will be collected from each surface water location.

*Response: Metals analysis will be performed on the LNAPL and the surface water samples collected during the near shore investigation. Sediment will not be analyzed for metals because they are not a COPC for this media as per the Work Plan. A filtered water sample for metals is required for comparability to surface water quality criteria.*

*This clarification will be added.*

In 2007 EPA could not collect sediment samples because of the presence of rip rap. It seems premature to eliminate metals as a COPC for sediments prior to any metals analyses of sediment samples. If sediment samples can be obtained, then they should be analyzed for metals and compared to ARARs to see if they are a COPC.

44. Page B-21, Section 4.5. Clarify why drilling equipment will not be decontaminated using hot steam, along with detergent and water.

**Response:** *This clarification will be added.*

Are they going to add hot steam to the SAP, or will they just clarify why they won't use hot steam? We recommend using hot steam because of the viscous nature of the LNAPL.

## **Appendix A – Quality Assurance Project Plan**

45. Page 5, Section 3.1. Clarify why NWTPH-HCID is included in this section, but not mentioned in the SAP.

*Response: This analysis will be removed from the QAPP.*

46. Page 5, Section 3.1. Clarify whether the PAHs include all typical PAHs, or just the carcinogenic PAHs.

*Response: The text will be revised to clarify that all typical PAHs are meant.*

47. Page 5, Section 3.1, third paragraph. Revise to include a discussion of EPA test methods for PCBs.

*Response: This discussion will be added.*

48. Page 12, Section 6.1. Revise to include delivery of CLP-equivalent data deliverables from the analytical lab, including raw data and chromatograms, to EPA.

*Response: Potlatch does not think CLP-equivalent data packages are necessary from the laboratory. However, we propose to receive chromatograms for organic analyses from the laboratory and conduct a Tier 2 Validation on the analytical results based on EPA National Functional Guidance.*

A stage 4 validation (i.e., CLP-equivalent data package) is required for EPA to properly assess the usability of data from any site investigation, site characterization, remedial or risk assessment. This is a requirement for EPA or its contractors (i.e., START), and it is also a requirement for PRP-led investigations.

49. Page 14, Section 7.0, Field Blanks. Clarify that one field blank per field event will be collected per type of equipment being used/decontaminated.

*Response: This text will be revised. Note that this will increase the number of field blanks analyzed.*

I appreciate the fact that they will revise the SAP accordingly, but I'm frankly shocked that this seems to be an issue for them. If you have drilling equipment installing monitoring wells and soil borings, and a sediment sampling tool to collect sediment samples, how can one field (rinse) blank possibly be sufficient to evaluate potential cross-contamination? If you have cross-contamination in the sediment samples, are you going to throw out all the boring data?

50. Table QAPP-2. The extraction time for SVOCs in water samples should be 7 days.

*Response: This will be revised in the table.*

51. Tables QAPP-5, 6, and 7. Tables must be revised to also include comparison of analytical results against the potential ARARs and TBC materials identified in Comment No. 1.

*Response: We are in the process of gathering these ARARs and TBCs. When we identify these various screening levels we will provide them for comment before adding them into the QAPP. These screening levels might also be useful in the EECA evaluation process.*

52. Table QAPP-5. Revise to include aluminum, iron, and manganese.

*Response: This will be revised in the table.*

53. Table QAPP-6. Revise to note the most recent CLP SOW - OLM04.3.

*Response: This will be revised in the table.*

### **Attachment C – Health and Safety Plan**

54. Page 6, Water Hazards. Revise to address entering the St. Joe River to collect sediment samples.

*Response: This information will be included in the HASP.*

55. Page 6, Underground Utilities: Note that public utility locates are limited to the highway right-of-way (ROW), and may not be adequate for the area of the Site that is not in the public ROW.

*Response: A private utility locate will be included.*

56. Page 6, Remote Site: There is a minor typo here. Wallace and St. Maries are over one *hour* away, not one “mile” away.

*Response: This will be corrected.*

### **Attachment D - Biological Assessment Work Plan**

No comment.

### **Attachment E – Cultural Resource Work Plan**

No comment.